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RECORDS OF WESTERN BEES

By T. D. A. Cockerell

The holotypes of all the new forms described are in The American Museum of Natural History. The bees collected by H. B. Parks are all from the southeastern part of Bexar County, Texas, except as otherwise noted.

Colletidae

Colletes oromontis Viereck

Colorado: Pine Cliffe, July 6, females (H. I. Gibbons).

Halictidae

Augochlora coloradensis Titus

Colorado: Morrison, June 15 (C. Wagner).

Halictus farinosus Smith

Utah: Provo, July 29–Aug. 1, alt. approx. 4750 ft. (Lutz); Huntsville, July 28 (Lutz); Salt Lake City, July 28 (Lutz).

Halictus lerouxii Lepeletier

Colorado: Jim Creek, near Boulder, alt. about 6400 ft., July 21 (Lutz), and Aug. 2 (Lutz), at *Rudbeckia laciniata*. Both sexes taken. This is the American representative of the European *H. rubicundus* Christ, and it is questionable whether they should be kept apart. In the punctured tegulae of both sexes, and dentate hind spur of the female, *H. rubicundus* agrees with *lerouxii*, and not with the very similar *H. farinosus* Smith. In *H. rubicundus* the hind tibiae and tarsi of the female are clear red, and this is true of *H. lerouxii* variety *ruborum* Ckll., described from the State of Washington. The case is closely parallel with that of *Clisodon*.

Halictus parallelus Say

Colorado: White Rocks, near Boulder, alt. about 5200 ft., Aug. 13 (Lutz).

Halictus sisymbrii Cockerell

Wyoming: Medicine Bow, June 23, alt. approx. 6600 ft. (Lutz); Pine Bluffs, June 9, alt. approx. 5050 ft. (Lutz); Laramie, June 14, alt. approx. 7200 ft. (Lutz).

Andrenidae

Andrena anograe Cockerell

Colorado: Princeton Hot Springs, June 16 (C. Wagner); Salida, June 20 (C. Wagner).

Andrena colletina Cockerell

Colorado: Gardner, alt. approx. 7000 ft., Sept. 20–Nov. 18 (W. Granger). It must have been taken at the beginning of the period cited. The spurs are white. One female.

Andrena erythrogastra (Ashmead)

Colorado: Salida, at flowers of *Salix*, June 19 (Ckll.).

Andrena hitei Cockerell

Colorado: Poncha Pass, June 26 (Ckll.).

Andrena lupinorum helenae, new subspecies

FEMALE.—Length about 14 mm.; black, robust, the mandibles, antennae and tegulae black; malar space very short; facial quadrangle broader than long; process of labrum truncate, only moderately broad, narrower than in *A. lupinorum*, and in front of it are two long slender pencils of red hair, lacking in *A. lupinorum*; third antennal joint a little longer than the next two together, these being about equal in length; facial foveae broad, light reddish, narrowly separated from eye, ending below near level of top of clypeus; clypeus densely and strongly punctate, the punctures tending to run in grooves, a distinct impunctate median line; hair of face thin and reddish brown, more brightly colored at sides and near antennae, but clear red on top of head; on cheeks it is rusty black, with a few coppery-red hairs, and a tuft of red at lower end; mesothorax and scutellum dull; the entire thorax above, and the tubercles, densely clothed with very bright fox-red hair, which also clothes metathorax, though here the color is not so rich; sides of thorax with purplish-black hair; wings hyaline, slightly dusky, the margin beyond the cells perceptibly darker; stigma narrowly lanceolate, red with a dark margin; nervures pale brown; basal nervure meeting nervulus; second cubital cell rather narrow, contracted above, receiving recurrent nervure beyond middle; third cubital very broad above, about twice as broad on marginal as second (in *lupinorum* the third is not as broad on marginal as second, and the second is much larger); hind wing with 14 hooks (13 in type of *lupinorum*); legs with mainly black hair, the scopa of hind tibiae entirely black; front femora with long pale reddish hair behind, hind femora with similar hair in front; short fringe on anterior basitarsi posteriorly appearing silvery; spurs dark rufous; abdomen broad, shining, finely and weakly punctured, without bands, the hair all black (slightly reddish black at apex), the dorsal hair of third and fourth tergites very short; second tergite in middle depressed about or rather over a third; venter with long black hair.

Colorado: South St. Vrain River, Lyons, July 9, 1933 (Helene I. Gibbons). In all respects very close to *A. lupinorum* Ckll., but appearing

distinct on account of the richly colored thorax, and with differences in venation and the process of labrum. I treat it for the present as a subspecies; the discovery of the males will doubtless enable us to settle the relationships of the two forms more precisely.

Andrena mentzeliae Cockerell

Colorado: Pueblo, Aug. 9, alt. approx. 4700 ft. (Lutz).

Andrena pertarda Cockerell

Colorado: Aspen, alt. approx. 8000 ft., July 24–27 (Pearce Bailey). The abdominal hair-bands are yellower than in the type.

Andrena prunorum Cockerell

Colorado: Princeton Hot Springs, June 16 (W. P. Cockerell); Salida, June 19 (Ckll.). The last was at flowers of *Salix*.

Andrena ribifloris Viereck and Cockerell

Colorado: Poncha Pass, June 20, at *Ribes* (Ckll.).

Andrena spaldingi, new species

FEMALE.—A species of the *A. vicina* group, superficially exactly like *A. lupinorum helenae*, with very bright red hair on thorax above, but differing as follows: hair of head entirely black, except a tuft of long pale red hair on vertex; flagellum very obscurely rufescent beneath; mandibles rufous at extreme tip; hair of metathorax, as well as pleura, black; wings dilute fuliginous throughout; stigma very dark reddish; second cubital cell large, broader than high, receiving recurrent nervure about middle; third cubital cell narrower than second on marginal; hair of legs entirely black; spurs black; second tergite more broadly depressed in middle. Process of labrum rather narrowly truncate, with sloping sides; clypeus very densely rugosopunctate, with a median smooth ridge; third antennal joint about as long as next two together; facial foveae similar to those of *A. lupinorum helenae*, but not reddened, though appearing pallescent in certain lights.

Utah: Eureka, May 31, 1920 (Tom Spalding).

Andrena vicina Smith

Colorado: Pine Cliffe, July 6, female (H. I. Gibbons).

Nomia apacha Cresson[1]

Texas: Bexar Co., two females, June 14 (Parks).

This is easily distinguished at a glance from any of the *N. heteropoda* series by the polished first tergite, with widely separated punctures.

[1]Mr. E. T. Cresson, Jr., has kindly examined the holotype of *Nomia apacha*, and reports that the first tergite has much more scattered punctures than has that of *N. marginipennis;* the smooth surface between the punctures averages about two to three times the diameter of the punctures on the median area of this segment. This confirms my revised determination of *N. apacha*.

The ventral hair of the abdomen is light red. Previously (Amer. Mus. Novitates, No. 433, p. 10) I have misidentified *N. apacha*, applying the name to specimens of the *N. heteropoda* series which had pale reddish tegulae, wings yellowish with dark border, and hair of thorax above pale fulvescent or rufofulvous.

This species was found by Mr. Parks visiting *Ratibida columnaris* (Sims), the bodies being covered with the bright yellow pollen.

Nomia bakeri Cockerell

A large colony of *N. bakeri*, east of Denver, was studied during the past summer, and cinema pictures were taken by Mr. Robert Niedrach of the Colorado Museum of Natural History. Bombyliid flies (*Heterostylum robustum* Osten-Sacken, det. M. James) were abundant, hovering over the nests, and two species of Mutillidae (*Dasymutilla occidentalis* var. *comanche* Blake and *D. sparsa* Fox, both det. Mickel) were observed. Numerous specimens of *Bembix spinolae* Lepeletier were nesting in the same place. The *Nomia bakeri* were found collecting pollen only from *Grindelia*. *Helianthus petiolaris*, very abundant all about, was never visited.

Nomia fedorensis Cockerell

Texas: Bexar Co., males June 4–July 12, females, May 20–June 4 (Parks). Mr. Parks found this in a sandy region, working only on one species of plant, the one-leafed bean.

Mr. Parks writes: "This beautiful little bee seems to work almost altogether on the one-leafed bean, *Dolicholus americanus* (Miller). I have seen literally hundreds of them, but they are very hard to catch as the beans grow in the soft white sand and the bees will not rise if they are covered by the net, but will run under the edge of the net. The only way to get them is to put the bottle directly over the insect on the flowers. I have seen the males visit *Cassia*; however they do not seem to feed, but are simply investigating. This bee seems to be solitary with its nest, which is placed generally right in the rut which is made by the automobile wheels in the sand where the public roads cross the sand dunes. I have tried to dig these out, but have never been able to follow the tunnel through the soft sand."

Nomia heteropoda variety **valida** (Say)[1]

Many years ago, Viereck suggested that the *Andrena valida* of Say was really a species of *Nomia*. A series of five females, taken by Mr.

[1] I find that Cresson ('Types of Hymenoptera') designates the male of *Nomia marginipennis* as the type. Thus it is possible that the form represented by the female will require a new name.

Parks in Bexar Co., Texas, June 24–July 13, is referable to the subgenus *Dieunomia*, and is, I feel sure, representative of the insect which Say called *Andrena valida*. It is a large species, with black pubescence, and dark fuliginous wings. The abdomen is without bands. To be associated with this are two males with equally black pubescence, and the structural characters of *N. heteropoda* (Say). These have the wings fuliginous throughout, like the females. In both sexes, the tegulae are black. The hair on the face of the males is of a dark chocolate color. The males are dated June 24 and July 13. Two other males, dated June 27 and July 11, are structurally similar, and have the same fuliginous wings and black tegulae, but the hair of the face is dull white; that of the vertex, cheeks, thoracic dorsum, pleura, and fringe on front legs pale grayish-brown. Another male, dated June 26, is similar to the last mentioned, except that the anterior wings are yellowish hyaline, with a very weak broad apical border. The hair on inner side of hind basitarsi is distinctly red. This third form of male exactly agrees with the description of *Nomia heteropoda* Say. I can only conclude that *Andrena valida* (1837) is the female of *N. heteropoda* (1824), but the name *valida* applies to the black variety, which deserves to be distinguished. In the collection of the Philadelphia Academy the female standing under *N. heteropoda* has uniformly fuliginous wings, and the question naturally arises, whether there is any female with yellowish, dark-bordered wings, corresponding with the *heteropoda* form of male. Such a female, with dark tegulae, and the hair of thorax very dark seal-brown, is the *N. marginipennis* (Cresson). The female *marginipennis* is first described, and I designate it as the type. But on comparing the descriptions of male *marginipennis* and *heteropoda*, no difference is apparent, except that the former appears to have the pubescence more ochraceous, not so gray. I conclude that *N. marginipennis* is specifically identical with *N. heteropoda*.

The second variety of the male, with fuliginous wings but hair as in *heteropoda*, may be called variety **semivalida**, new variety.

Females from Crowley and Olney, Colorado, Sept. 1 (M. T. James), which I had referred to *N. apacha* Cresson, have orange wings with dark border, dark tegulae, and the fine dense tomentum of mesothorax is pale grayish-fulvous. The hair on under side of abdomen is very dark brown. This is not the real *N. apacha*, but belongs to the *heteropoda-marginipennis* series, differing by the pale hair of thorax above, as in the described males.

This could be regarded as the true female of *N. heteropoda*, i.e., strictly corresponding with the male. The females of this series would accordingly fall into three color-varieties, as follows:

Wings entirely fuliginous; pubescence black ..... *valida* (Say).
Wings orange or yellowish with broad dark border
Pubescence dark ..... *marginipennis* (Cresson).
Pubescence largely pale ..... *heteropoda* (Say).

All the specimens obtained from Mr. Parks came from the same locality, were collected at about the same time of year, and were visiting flowers of *Helianthus annuus* Linnaeus.

Nomia heteropoda semirubra, new subspecies

FEMALE (type).—Tegulae light fulvotestaceous; dense tomentum of thorax above ferruginous; wings yellowish with a broad dark border; hair on under side of abdomen black or rusty black.

MALE.—With the same coloration of tegulae, dorsal pubescence and wings.

Texas: type (formerly recorded as *N. apacha*) from Victoria, Oct. 2, at flowers of *Helianthus* (Leisler); two females, Bexar Co., Oct. 27 (Parks); males from Bexar Co. are dated Oct. 6 and 12.

The Bexar Co. specimens were collected from *Helianthus annuus*, and were numerous at one place, about twenty miles from the locality of *H. heteropoda* variety *semivalida.*

Nomia heteropoda atripennis, new variety

FEMALE (type).—Tegulae ferruginous; hair of thorax above red; wings entirely fuliginous; hair on under side of abdomen black.

MALE.—With the same coloration of tegulae, dorsal pubescence and wings.

Texas: Bexar Co., Sept., Oct. (Parks). Taken at *Monarda punctata,* in the heart of the sand dune country, where it was quite common.

This seems to be more than a color-variety of *N. heteropoda.* The females average smaller, and the insect flies much later in the season.

The western *N. xerophila* (Ckll.), with reddish or pale hair on under side of female abdomen, is apparently to be regarded as another subspecies, *N. heteropoda xerophila.* It flies in September.

Nomia mesillae (Cockerell)

Texas: Laredo, May 18, male. Received from H. B. Parks.

So far as I can now judge, this cannot be separated from *N. apacha,* which has been known only from the female.

Males only were collected, in the heart of the sand dune country, on *Pentalostemon microphyllus,* which Mr. Parks finds is a favorite plant of the species of *Nomia* in Texas. *N. mesillae* seems to be very rare in this region, and "probably belongs to a great group of either wandering, or blown in, insects which visit this section from the south each summer."

Nomia nortoni Cresson

Texas: Bexar Co., males July 12 to Sept. 27; Medina Co., June 25, female (Parks).

Mr. Parks reports as follows concerning the nesting-sites of *N. nortoni:*

I happened to hear of these nests from the fact that the Mexicans were unable to drive the teams with which they were cultivating corn through these towns due to the great number of bees, and appealed to me for a remedy. I suggested that the cultivating which the bees were giving the land was far more beneficial than the scratching which was being done with the cultivators, and the farmers ceased to attempt to cultivate these spots, and not strange to say the corn in these two places was almost one third larger than the other corn, this being of course due to the fact that the ground was perforated with hundreds of holes to the depth of fourteen to sixteen inches.

This is the most common species of the genus in the region about San Antonio. It has been observed by Mr. Parks visiting 83 species of plants, but it gets most of its pollen and nectar from *Petalostemon microphyllus* Torrey and Gray, *Monarda punctata* Linnaeus, and *Brazoria truncata* (Bentham). Mr. Parks adds: "It is periodic. The periods seem to be about three years in length." It is most abundant where the soil is sandy.

Nomia parksi, new species

FEMALE.—Length about 8.5 mm., anterior wing about 7.3; black, tergites 2 to 4 with broad, even, light green bands, slightly flushed with red; pubescence rather dull white, clear white on face, cheeks and pleura; tegulae small, shining black; stigma dusky, ferruginous, with a darker margin. Easily known from *N. fedorensis* by the paler, less brilliantly colored abdominal bands, first tergite much more feebly and sparsely punctured, and flagellum black, with only a faint reddish tinge at end. It is close to *N. mesillensis* Ckll., but easily separated by the first tergite, which is dull, with a minutely tessellate surface, and sparse large shallow punctures; in *mesillensis* it is highly polished. The abdominal bands are not as broad as in *mesillensis*, and the raised part of second tergite has its posterior border subangulate (quite straight in *mesillensis*). The region before this border is dull; in *mesillensis* it is highly polished. Compared with *N. maneei* Ckll., the band on second tergite is much broader, and the white hair at margin of sides of first is conspicuously longer. The tegulae and antennae are also differently colored. The black tegulae and color of abdominal bands separate it from *N. uvaldensis* Ckll., though there is a resemblance in the first tergite. The legs are black, without the red color seen in *N. uvaldensis*. The stigma is conspicuously larger and longer than in *N. fedorensis*, and the second cubital cell receives the recurrent nervure in the middle, but much beyond the middle in *N. fedorensis*. The transverse channel at base of metathorax is narrow and feebly sculptured, mandibles black, with an obscure reddish stain subapically. Wings hyaline, not at all reddish, faintly dusky beyond the cells.

Texas: Bexar Co., May 25, 1931 (H. B. Parks).

This species was collected with *N. fedorensis* and was not distinguished at the time.

Oxaeidae

Protoxaea texana (Friese)

Texas: Southeast Bexar Co. (H. B. Parks). Mr. Parks finds the bee visiting *Monarda punctata* Linnaeus and *Aloysia ligustrina* (Lagasca). The females are numerous in the sand dunes on *Monarda*, but males were found only on *Aloysia*.

Panurgidae

Halictoides maurus (Cresson)

Colorado: Pingree Park, Aug. 18 (Louise Ireland). This bee has collected a quantity of remarkable lilac-colored pollen.

Perdita albipennis Cresson

Colorado: Inspiration Point, near Denver, July 2 (H. I. Gibbons).

Protandrena mexicanorum (Cockerell)

Texas: one female collected by H. B. Parks, near San Antonio.

Spinoliella australior (Cockerell)

Colorado: Canfield, Aug. 15, 1922 (Lutz).

Spinoliella scitula (Cresson)

Colorado: White Rocks, near Boulder, alt. about 5500 ft., at *Cleome serrulata*, July 30 (Lutz); Denver, July 24 (L. O. Jackson).

Spinoliella zebrata (Cresson)

Colorado: Golden, June 30, 1918, both sexes (L. O. Jackson).

Anthophoridae

Ancylosceles maculifera, new species

MALE.—Length about 7.3 mm.; black, with white hair; clypeus finely punctured, shining, entirely black; labrum shining and well punctured, seen from in front appearing black, but having a large transverse white mark, conspicuous when seen from a lower position, where the hair does not conceal the surface; mandibles black at tip, then bright red, and the basal part broadly yellowish white; flagellum obscurely reddish beneath, and above at apex; mesothorax dullish, very finely punctured; tegulae very dark reddish; wings clear hyaline, stigma rather dusky red, with a dark margin; small joints of front and middle tarsi red, hind tarsi chestnut red, the basitarsi with a large thorn-like process; hind femora greatly swollen; abdomen with

white hair-bands, the first two failing in middle; bases of fourth and fifth tergites obscurely reddish.

Texas: Bexar Co., May 6, 1932 (H. B. Parks). Also labelled "nest." In my key in Proc. Calif. Acad. Sci., June 1923, p. 84, this runs to *A. toluca* (Cresson), which has the hind femora much less robust, and the process on hind basitarsi much smaller. If regarded as having a black labrum, it would run to *A. globulifera* (Ckll.), which has the legs entirely dusky red, the femora less robust, the abdominal bands much less developed, and the wings grayish. The abdominal bands are pure white, not yellowish as in *A. wheeleri* (Ckll.). *A. armata* (Smith) is easily separated by the entirely light labrum, and the light band of clypeus.

The only species previously recorded from the United States (*A. sejuncta* Ckll., 1933, from Colorado) is related, but has an entirely black labrum, and no light spot on mandibles.

Anthedon compta (Cresson)

Texas: Bexar Co., June 13, male (H. B. Parks).

Clisodon furcatus (Panzer)

Wyoming: Camp Roosevelt, Yellowstone Park, July 14–17, 1923, female (American Museum). This specimen has the light hair of thorax above strongly fulvescent, and nearly agrees with a specimen from Berlin. It differs, however, in the broad band of black hair along hind margin of hind tibiae, and in general has a more melanic appearance than normal *C. terminalis* (Cresson), in some degree approaching *C. syringae* Cockerell. All these bees appear to be races of one species, which is Holarctic in distribution. (See also Pan-Pacific Entomologist, I, p. 50.)

Emphoropsis johnsoni Cockerell

Colorado: Apex Canyon, Golden, May 1, male (L. O. Jackson).

Melissodes atraticornis, new species

MALE.—Length about 9.5 mm., anterior wing about 8; black, with abundant long rather dull-white pubescence; no dark hairs on vertex, but a row of black hairs on scutellum; antennae very long (flagellum about 8 mm.), entirely black; facial quadrangle distinctly higher than broad; eyes (dry) bluish gray; clypeus short and broad, light yellow, with a black lower margin, and a black mark on each side above; labrum (except for the white hair) entirely black; mandibles black; mesothorax and scutellum moderately shining, the mesothorax polished on disc; tegulae black; wings hyaline, very faintly reddish, nervures dark brown; basal nervure falling far short of nervulus, the distance equal to much more than half of nervulus; second cubital cell large and very broad, receiving recurrent nervure at about the beginning of its last third; legs with abundant white hair, pale reddish on inner side of tarsi;

abdomen somewhat shining; the hind margins of tergites colorless; very abundant long white hair all over first tergite; tergites 2 to 5 with loose irregular hair-bands; apical plate broadly truncate, dark brown; the usual small dark spines at sides of last two abdominal segments.

Colorado: Pingree Park, Aug. 14, 1933 (Louise Ireland). Related to *M. fremonti* Ckll., but smaller, with narrower face, differently colored eyes, and basal nervure much more remote from nervulus.

Melissodes atripes Cresson

Texas: Bexar Co., both sexes, the female Sept. 27 (H. B. Parks).

Melissodes obliqua (Say)

Texas: near San Antonio, male June 10, female May 22 (H. B. Parks).

Melissodes suffusa Cresson, variety **laterufa,** new variety

FEMALE.—A peculiar variety, with the margin of first tergite broadly hyaline, and the following tergites with the tegument red under the broad bands, the red part of second and third tergites in middle being much broader than the black base; mesothorax with rich fulvous hair, and almost no dark, but much dark brown hair on scutellum; vertex with bright fulvous hair, but face and cheeks with white; labrum dusky red, with a tuft of red hair at apex; flagellum red beneath. The general appearance of the abdomen is that it is black as far as middle of second tergite, and pale red beyond, with the bases of tergites blackish.

Texas: Bexar Co., Oct. 11, 1932 (H. B. Parks). It seems appreciably more robust than ordinary *M. suffusa.* There is quite a strong resemblance to *M. townsendi* Ckll., from New Mexico, of which only the male is known. *M. townsendi* has lighter, redder, nervures and stigma, but it is possible that *laterufa* is a form of the female of that species, rather than of *M. suffusa.*

Melitoma grisella (Cockerell and Porter)

Colorado: La Junta, Aug. 12, alt. 4100 ft., females (Lutz).

This species nests in banks; the earthen porch protecting the entrance to the nest has a slit above, as in *Anthophora,* but the structure is more irregular, and is attached to the surface of the bank throughout its length, instead of standing out, with a downward curvature, as in *Anthophora.*

Xenoglossodes albata (Cresson)

Colorado: Gregory Canyon, Boulder, Aug. 4 (E. Nelson).

Xenoglossodes pallidicauda, new species

FEMALE.—Length about 9 mm.; robust, black, head and thorax with copious, entirely white hair; clypeus densely punctured, entirely black; labrum with abundant slightly yellowish hair; mandibles short and stout, mainly light red, but black at apex, and at base with a triangular yellow spot above; eyes dark brown; facial quadrangle about square; flagellum bright red beneath except at base; vertex shining; disc of mesothorax shining, with well separated punctures; scutellum closely punctured, dullish; tegulae black with reddened margins, or nearly all reddish; wings short, clear hyaline, stigma and nervures reddish; legs with copious white hair, tuft on hind knees pale reddish; abdomen with long white hair on first tergite, which has a broad hyaline margin; second tergite with a broad dense creamy white apical band, a dark (exposed) zone before it about equally broad, and a basal white band; rest of abdomen densely covered with creamy white hair, except that across middle of third tergite it is thin, so that a dark band is more or less evident; hair of apex all yellowish white; venter with white hair.

Texas: southeast Bexar County, two collected by Mr. Parks, who finds it very common at flowers of *Ximenesia encelioides* Cavanilles.

In my key to *Xenoglossodes* this runs to *X. excurrens* Ckll., which is considerably larger, with dark hair at end of abdomen. There is a close resemblance to *X. gutierreziae* Ckll., but that has the light margin of first tergite much narrower, and a broad light yellow band on clypeus. *X. eriocarpi* Ckll. has the broad marginal band on first tergite, but it has a yellow band on clypeus. I had united *Xenoglossodes* with the Old-World *Tetraloniella*, but Mr. Timberlake finds differences in the genitalia, and it may well be that they should be kept apart. *X. pallidicauda* has five-jointed maxillary palpi.

Melectidae

Bombomelecta fulvida (Cresson)

Colorado: Morrison, June 15 (C. Wagner); Swissvale, at *Pentstemon*, June 17 (Ckll.).

Epeolus americanus (Cresson)

Colorado: Ward, alt. approx. 9300 ft., June 25, 1922 (Lutz); Electra Lake, alt. approx. 8400 ft., June 28–July 1 (Lutz); Summit Road, Ouray, alt. approx. 10,000 ft., July 13 (Lutz); Wolf-Fall Creeks, Mineral Co., alt. approx. 7900 ft., June 20 (Lutz).

This is the *Phileremus americanus* of Cresson, which is an *Epeolus* with only two cubital cells. The type of *Phileremus* is *P. punctatus* (Fabricius), a very different (European) insect.

There are two other species of so-called American *Phileremus*, which now stand as follows:

(1).—*Epeolus mesillae* (Cockerell); *Phileremus mesillae* Ckll. 1895.
(2).—*Epeolus montanus* (Cresson); *Phileremus montanus* Cresson, 1878.

E. montanus, from Cresson's description, is a relative of *E. asperatus* Ckll. (California), the type of which has only two cubital cells on one side, and on the other only the lower third of the second intercubitus. The recently described (European) *E. montanus* Bischoff will have to be renamed.

Epeolus americanus has two-jointed maxillary palpi, the second joint very small.

Epeolus olympiellus Cockerell

Idaho: Craters of the Moon, June 18, male (Louise Ireland). Previously known from Washington State.

Holcopasites lutzi, new species

MALE.—Length a little over 7 mm.; robust, black, with the pubescence white; eyes pale brown; face broad; dense white hair at sides near antennae, and more narrowly across lower end of supraclypeal area, forming a sort of band; clypeus excessively densely punctured, with a shining margin; labrum black, with a band of white hair, and a small basal appressed spine-like structure; mandibles dusky red, black at end; flagellum dusky red beneath; vertex broad and dull, with a minute shining spot on each side, simulating an extra pair of ocelli; a thin band of dull white hair extends up to middle ocellus, and behind ocelli a band of scattered pale fulvescent scales extends back to occipital margin, and is in a line with an exactly similar band on middle of mesothorax, which however is lacking on nearly the posterior half, though continued across the rough bigibbous scutellum; tubercles red; mesopleura dull black, with only a small spot of light hair in middle; tegulae rather dark red; wings dilute fuliginous, with dark stigma and nervures; first recurrent nervure meeting first intercubitus; legs mainly black, the grayish pubescence on hind tibiae producing a speckled effect; anterior tibiae red at each end, and rufescent in front; middle tibiae red at extreme base, and slightly so at apex; hind knees red; tarsi dark; abdomen broad, hind margins of tergites with bright red bands; basin of first tergite sharply defined, angulate above, and with a shining sulcus in middle; first tergite dorsally with a pair of elongate white hair-spots; tergites 2 to 6 each with four spots; apical plate brown; venter with fine whitish tomentum.

Colorado: Wray, Aug. 17–19, 1919, alt. approx. 3700 ft., in canyon, (Lutz). Related to *H. heliopsis* (Robertson) and *H. robertsoni* Crawford, but considerably larger, with the pleura differently marked, and other differences. The pattern of the abdomen is much like that of *H. heliopsis*.

Holocopasites pulchellus (Cresson)

Colorado: Denver, June 18, 1918 (E. C. Jackson).

Pseudomelecta miranda (Fox)

Colorado: Erie, June 27 (W. P. Ckll.).

Megachilidae

Anthidium emarginatum Say

Colorado: Poncha Pass, June 20 (Ckll.).

Anthidium tenuiflorae Cockerell

Colorado: Princeton Hot Springs, June 16 (Ckll.); Salida, at *Peritoma serrulatum*, June 19 (Ckll.).

Lithurgus apicalis Cresson

Colorado: Swissvale, June 17, males, three at flowers of *Opuntia* and one at *Pentstemon*, the last unusually small.

Monumetha albifrons (Kirby)

Colorado: Pine Cliffe, July 6, male (H. I. Gibbons).

Osmia armaticeps Cresson

Colorado: Poncha Pass, June 20 (Ckll., C. Wagner).

Osmia bruneri Cockerell

Colorado: Swissvale, at flowers of *Pentstemon*, June 17 (Ckll.); Turkey Creek, Morrison, June 19 (H. I. Gibbons).

Idaho: Craters of the Moon, June 18, both sexes (Louise Ireland).

Osmia bucephala Cresson

Colorado: Poncha Pass, June 20 (W. Steele, C. Wagner).

Osmia cobaltina Cresson

Idaho: Craters of the Moon, June 18, female (Louise Ireland).

Osmia fulgida Cresson

Colorado: Maysville, June 18 (Mildred Steele); Pingree Park, female, Aug. 15–17 (Louise Ireland, H. I. Gibbons).

Idaho: Craters of the Moon, June 18, male (Louise Ireland).

Osmia gaudiosa Cockerell

Colorado: Swissvale, June 17 (Mildred Steele). One was at flowers of *Pentstemon*.

Osmia holochlora Cockerell

Colorado: Princeton Hot Springs, June 16 (C. Wagner).

This is separated from *O. gaudiosa* (males) thus:

Second cubital cell receiving second recurrent nervure much nearer apex than first to base ..... *gaudiosa* Ckll.
Second cubital cell receiving recurrent nervures about equally far from base and apex; face strongly brassy ..... *holochlora* Ckll.

Osmia hypochrysea Cockerell

Colorado: Poncha Pass, June 20 (C. Wagner, Walter Steele).

Osmia louisae, new species

FEMALE.—Length, 12 mm.; robust, brilliant purple-blue on face, cheeks and sides of thorax, suffused with green on vertex and disc of mesothorax, the abdomen shining and distinctly green; pubescence long and coarse, entirely black; mandibles quadridentate, black with a green suffusion at base; face broad; clypeus dull and excessively densely punctured; vertex very broad behind ocelli; tegulae green, black posteriorly; legs blue, suffused with green; base of metathorax somewhat shining, but not polished; wings strongly dusky (grayish) throughout, without any cloud in marginal cell; first recurrent nervure joining second cubital cell very near base, second more than twice as far from apex; basal nervure falling a trifle short of nervulus.

Idaho: Craters of the Moon, June 18, 1933 (Louise Ireland). Superficially exactly like *O. ribifloris* Ckll., but with no trace of a smooth line on clypeus, hind margin of first tergite broadly smooth, no cloud in marginal cell. The venation is very different; in *O. ribifloris* the first recurrent nervure ends far from base of second cubital cell, the distance about equal to length of first intercubitus; while the second recurrent ends very near the apex of the cell.

Osmia megacephala Cresson

Colorado: Steamboat Springs, July 21 (H. I. Gibbons).

Osmia nifoata Cockerell

Colorado: Poncha Pass, June 20 (C. Wagner); Princeton Hot Springs, June 16 (C. Wagner); Maysville, June 18 (Mildred Steele).

Osmia nigrifrons Cresson

Colorado: Morrison, June 15 (C. Wagner); Princeton Hot Springs, June 16 (C. Wagner).

Osmia pentstemonis Cockerell

Colorado: Poncha Pass, June 20 (C. Wagner).

Osmia wardiana Cockerell

Colorado: Poncha Pass, June 20 (Ckll., W. Steele, C. Wagner); Maysville, June 18 (Ckll.).

Maysville is in Chaffee County, alt. 8310 ft.

Bombidae

Psithyrus insularis Smith

Colorado: Maysville, June 18 (Ckll.); Steamboat Springs, July 20 (H. I. Gibbons).

Apidae

Apis mellifera Linnaeus

Colorado: Salida, at Salix, June 19 (Ckll.). Form with black abdomen.